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ABSTRACT

The use of formulaic speech is seen as a learning strategy in children's first language (L1) acquisition to a limited extent, and to an even greater extent in their second language (L2) acquisition. While the first utterances of the child learning L1 are mostly one-word constructions, many of them are routine words or phrases that the child learns as unanalyzable wholes. These units have specific semantic function and only later can their parts be altered to fit the situation. The utterances are limited, however, by phonological and memory limitations of the child. Once the child has these strategies and is well into learning L1, their use can be even more apparent in second language acquisition. Chronological age is of less importance than stage of linguistic development in L1 in determining whether a child will transfer the formulaic strategy to learning L2. The formulaic strings in L2 differ from those built from scratch by the child learner in that they are not filtered through the child's L1 phonology, and no situational meaning is attached to them. Competition from L1 causes the errors in L2 speech that are not formulaic. (PJM)

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FORMULAS IN FIRST AND SECOND LANGUAGE ACQUISITION[1]

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In the past few years a number of writers have begun pointing out that not all of language is generated afresh each time we speak, starting with a unique combination of meanings and working on through from a deep to a surface structure. Instead, it has been suggested that a great deal of ordinary language consists of well-worn cliches and idioms, quotations, allusions, and other routines. In Charles Fillmore's words, "an enormously large amount of natural language is formulaic, automatic, and rehearsed, rather than propositional, creative, or freely generated" (1976: 9).[2] As examples of formulaic language we might cite such old American rejoinders as "You're telling me?", "No kidding!", or "Nothing doing!" (though none of these is as popular now as fifty years ago; the last expression has been eclipsed by the ubiquitous "No way!"), as well as such more current expressions as "what's it TO you?" or "I could care less" (which has been tolerated in that anomalous form for over two decades now); formulas may also range from such deliberately vivid phrases as "laughing all the way to the bank" or "Butter wouldn't melt in her mouth" (which, for most American speakers, at least, seems to imply a calculated appearance of sweetness and innocence: the route from literal to idiomatic meaning is fairly distant in this case), to the dull but time-honored "Hot enough for you?"

Dwight Bolinger is another major proponent of the view that the role of such prepackaged strings is far more pervasive in language than has been acknowledged by linguists. Applying Ladefoged's remark that "The central nervous system is like a special kind of computer which has rapid access to items in a very large memory, but comparatively little ability to process these items..." -- which originally related to the issue of distinctive features as opposed to segments -- to the area of morphology and syntax, Bolinger insists that "speakers do at least as much remembering as they do putting together" (1976: 2). He suggests further that "learning goes on constantly -- but especially with young children -- in segments of collocation size as much as it does in segments of word size, and...much if not most of our later manipulative grasp of words is by way of analysis of collocations" (8).

Bolinger offers little in the way of child language data to support his

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[1]This paper was presented at the Symposium on Exceptional Language and Linguistic Theory, LSA Annual Meeting, Los Angeles, Calif., Dec. 27, 1979. It has benefitted considerably from the critical comments of Dwight Bolinger, Marvin J. Homzie, and Loraine K. Obler on earlier drafts.

[2]Cf. also Olson 1973, Bolinger 1976 and 1977, Ferguson 1976, Ruhl 1977, Coulmas 1979, and Fillmore 1979a and b.

point, and in fact such data are difficult to obatin from studies of first-language acquisition since, as is well known, most children begin with just "one word at a time" (Bloom 1973).[3] Yet incontrovertible evidence for the prefabricated or memorized nature of much of the material incorporated into the flow of normal adult speech is even more difficult to obtain, since the joints are rarely detectible, except by introspection. In children's speech, however, the small quantity and simple structure of the language produced can sometimes allow an analyst valuable insights into the psychological processes underlying fully competent adult language use. Following up on Bolinger's hint, then, in the present paper I will begin by reviewing what data can be found regarding the learning of larger-than-word-size chunks in first language acquisition, and I will then go on to focus on the child second-language learner, whose reliance on memorized strings in the early stages is quite indisputable.

Brown (1973) describes in fairly exhaustive detail the morphological and syntactic/semantic properties of the language of three children he and his colleagues at Harvard followed for several years. In A First Language he considers only data from the early stages, when the children ranged in age from 20 to 34 months and used an average of up to 2.50 morphemes per utterance. He mentions in passing the use of such "inflexible" forms as what's that?, where (plus noun), where (noun) go?, at stage I (MLU 1.75), well before the "flowering of wh-questions" that takes place in Stage III. Brown comments that "the precursors that appear in Stage I must be generated by some simpler mechanism either as fixed routines or as simple frames in which a set of words could rotate" (181; cf. also Brown 1968, Brown and Hanlon 1970).

In Stage II, Brown found that one of the children learned it's and that a as units, and also tended to use several obligatorily transitive verbs in combination with the article a: get-a, got-a, put-a, want-a. Finally, "There is some evidence from one or more of the children of such other amalgams as want-to, have-to, going-to, another-one, what-that, and let-me" (395). Brown points out that all of these amalgams are based on pairs of words that occur as pairs with unusually high frequency in parental speech, so that we have here one exceptional case where frequency of presentation has a direct effect on the child's production. Brown mentions no other instances of rote memorization of multi-morphemic sequences by the children; it seems safe to assume the phenomenon scarcely occurred in Brown's data.

In a study of lexical and semantic development Nelson (1973) drew on data from 18 children producing their first fifty words, and thus was able to hazard some conclusions regarding individual differences. She found a dichotomy between what she termed referential and expressive children, the distinction being based primarily on the number of common nouns among the first 50 words the child learned (more or less than 50%, respectively). A

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[3]Hence the near-universal dependence on mean length of utterance (MLU), measured in morphemes, as a standard against which to judge the comparability of children in different studies, learning the same or different languages. Though this standard is admittedly flawed (cf. Crystal 1974), it has been repeatedly shown to be far superior to chronological age as an index of the child's relative language development. The absence of any comparable measure is painfully felt in second-language acquisiton studies (cf. Larsen-Freeman 1978).

second characteristic difference dividing the two groups was "the early learning of speech units of two words or more... The number of phrases produced by the R[eferential] group during this period ranged from 0 to 5 (mean 2.4), while those of the E[xpressive] group ranged from 6 to 18 (12.6)". Nelson goes on to say that these phrases -- many of which she classifies as "personal-social" language, including "expressions useful for dealing with people" (go away, stop it, don't do it, as well as thank you, do it, I want it) -- "may be considered as preformed or stereotyped units...which can be combined into larger units but are not themselves analyzable. Thus, they are equivalent to words in their linguistic function" (25).

The children these data come from are younger than Brown's (they ranged from 14 to 24 months at the point where their vocabulary count was 50 words, the words in unit-phrases being counted separately) but, presumably because the sample is larger, we find several children who learned whole phrases at the outset of language acquisition (cf. also the discussion of "rote production" in Dore et al. 1976).

A third observer, Ann Peters, followed just one child, but that child proved to have two strategies in early language learning which corresponded roughly to the two strategies identified by Nelson.

> The first kind...was the nice, neat one-word utterance which began occurring...when he was about 14 months old...I will call this kind of speech ANALYTIC...The second type of speech was beginning to appear even earlier.... In this type, each target phrase has a very characteristic intonation contour...Minh...apparently attempted to extend this strategy of extracting the melody, at the expense of the individual segments, to those cases where the target sentence was NOT so reliably characterized by its intonation contour, and hence was not recognizable except in very context-bound situations. The result was utterances in which, though the segmental fidelity was not very great, the combination of number of syllables, stress, intonation and such segments as could be distinguished combined to give a very good impression of sentencehood. I will call this the GESTALT type of speech since...it seems to aim at whole phrases or sentences rather than single words. (1977: 563f)

Some of Minh's phrases are clearly formulas like those Nelson's expressive children used -- look at that!, what's that?, silly, isn't it? -- though others, more specific in reference, seem less likely candidates for unit-learning or rote memorization -- e.g., open the door!

Cazden (1968) has commented, in an analysis of the development of inflection in the Harvard children, that "The pattern of no use, followed by infrequent but invariably correct use, followed only later by evidence of productivity, characterizes the development of many features of the children's speech." She goes on to remark that one might infer from these data "that the child begins to operate with stored fragments of speech he has heard... which are somehow tagged liberally for semantic information on the verbal and nonverbal context and only later are gradually subjected to analysis for the acquisition of productive rules" (437). Similarly, Olson (1973), citing an atypically complex negative from Bloom's data (1970), ə don't want baby, supposes that such unanalyzed units "may be precursors of the preprogrammed routines" which he believes adults use to achieve "encoding economies"; they

would provide "an example of how the child can produce longer or more complicated utterances by, in a sense, avoiding the computation of all the internal structure of the string" (156).

Cazden's sketch of the learning process as involving, first, memory (coding of unanalyzed units), then analysis (productive use, marked by overgeneralization) can be seen to apply to phonology and semantics as well as to inflectional morphology. Thus, Ferguson and Macken (this volume) describe early phonological acquisition in these terms:

> We begin with the observation that the data from a very young child -- one just learning to talk -- are piecemeal and apparently unintegrated. It seems that the child initially analyzes word shapes on an individual basis... At some point, the child begins to recognize similarities between classes of sounds and sounds-in-combination, and to construct rules for relating similar sounds and word shapes...

Similarly, Carey (1978) has offered a theory of semantic acquisition that involves "missing features and haphazard examples": "On this view, the child learns, object by object and particular part by particular part, what spatial adjective applies to what kinds of variation..." (286). This information is at first encoded "in an unanalyzed format", just as the early use of causative verbs may involve "notions of causation, but only as part of unanalyzed conceptual packages" (289). Carey outlines three stages in the acquisition of causation by Bowerman's daughter Christy: "The representation of causative verbs as unanalyzed cognitive units, the abstraction of the lexical feature [cause], and finally the long-drawn-out process of working out the details of the semantics of causatives" (291 -- or the idiosyncracies of their morpho-lexical mapping in English).

Drawing on Karmiloff-Smith and Inhelder's studies of cognitive abilities outside the realm of language (specifically, the development of understanding of properties of weight and balance), Ferguson and Macken outline a seven-step acquisition process, beginning with "(a) single item match, (b) gradual recognition of a pattern, (c) period of exploration, (d) construction of a theory, followed by generalization...and loss of ability...". If we view the rote-learning of irregular verbs, whole sound-shapes, "haphazard examples", and routine syntactic units as instances of the first step, we can readily grant that memory seems to pave the entry-way to system-building or productive grammar. Yet, as Krashen and Scarcella (1978) have forcefully argued, the process of analysis need not <u>begin</u> with units already available for productive use. Rather, in phonology we see the child <u>selecting</u> words to attempt partly on the basis of the sounds he can handle -- showing some awareness of the sound system prior to the development of a productive repertoire (cf. Drachman 1973, Ferguson and Farwell 1975, Macken 1976, Menn 1976, Vihman 1976, Celce-Murcia 1978). Similarly, "Bowerman argues that Christy's mastery of the syntax of corrdinated [causative] structures was a prerequisite to...her abstraction of [cause] as a lexical organizer" (Carey 1978: 290). Thus, we can agree with Krashen and Scarcella that "prefabricated routines may evolve into patterns, but at the same time, independently, the creative construction process develops" (284). Rote-learning of shorter and longer, simpler and more complex units, at the various levels of sound and meaning, syntax and lexicon, must go on simultaneously with analysis, the latter based at first on the words, sounds, meanings and constructions in the perception or comprehension-based store that antedates the first productive uses of language

(Huttenlocher 1974, Nelson et al. 1978).

To turn to one last example from the first-language acquisition literature, Ruth Clark (1974) found that her son Adam, at age 2;9 to 3;0, often incorporated into his utterances whole strings from a preceding adult utterance, e.g.:

> Mother (attempting to take the coat her son has laid on the floor, preparatory to putting it on): That's upside down.
>
> Child: No, I want to upside down.

In addition, Adam used utterances such as Sit my knee to mean 'I want to sit on your knee'. Such utterances "were quite clearly copied as incompletely analysed units, and given only a global interpretation with reference to the situation... The fact that copied utterances were retained intact for several weeks without other lexical items being substituted suggests that such utterances...function as units with limited internal structure" (4). Writing as if in direct illustration of Bolinger's point, Clark comments:

> In Adam's speech at this time a number of routine unproductive sequences seemed to coexist with a few simple productive rules. Many, though not necessarily all, the productive rules originated as invariable routines, which were in use for some time with the original lexical items before new lexical items were inserted. (4)

Adam's strategy is clearly a form of imitation, though much of his "copying" is delayed imitation. Nelson (1973: 49ff) found that imitation correlated significantly with vocabulary level, and, to a much smaller extent, also with child's age. The children who were more advanced in terms of vocabulary were more likely to imitate, and were also most likely to imitate familiar words. This would suggest that children are most likely to learn whole strings or collocations once they are launched on language acquisition -- after Stage II, say, in Brown's terms -- and would tend to explain why one finds a one-word and a two-word stage but not such clear-cut three- or four-word stages: At that point the child is likely to be making use of "unopened packages", as Clark calls them, which can be combined to produce long, superficially complex utterances such as I don't know where's Emma gone or That a bunny taking a book home (Clark 1974: 5f; cf. also Clark 1977). Because such utterances are often apparently well-formed, they are difficult to detect. A good deal of what Clark calls "performing without competence" must pass unnoticed.

It is unclear why multimorphemic lexical units or formulas should be fairly seldom used at the outset in first language acquisition, or to put it differently, why children do tend to begin with one word at a time. Memory span has most often been implicated (cf. especially Brown and Fraser 1963), but this position has recently been challenged (Olson 1973, Braine 1974). Olson points out that studies of memory which use non-verbal stimuli show relatively little development from three-year-olds to seven-year-olds and even to adults. (Cf. also Flavell and Wellman 1977.) He suggests that "the performance deficits that we find in younger children's remembering are due to their failure to organize, plan, monitor, and integrate their information processing and remembering as effectively as older children and adults" (151 -- but, as he also notes, the evidence for that point is largely drawn from experiments with children aged 3 1/2 or 4 at the youngest). Furthermore, there is evidence that even very young children can sometimes remember

impressively long strings: Cf. "Eric's ability to 'recite' accurately from memory long passages of text in his favorite story books, turning the pages at the appropriate juncture, when he was two and one-half years old. But he was unable to answer specific questions about the text, and certain phrase structures he recited -- sentence adverbials for example -- did not appear in his spontaneous utterances" (Bloom 1970: 168f). Ann Peters suggests that formulas may not in fact be uncommon in early child language; it may be that they are rarely reported simply because linguists have been biased to expect single words or morphemes and are inclined to view other kinds of data as "noise" or a residue of "unintelligible utterance" (Peters, in preparation and personal communication). As Peters notes, the difficulty a child typically experiences with phonological control in the early stages adds to the linguist's difficulty in "recogniz[ing] the multimorphemic nature of the target" (in preparation: 10).

In any case, there is one kind of language learning that appears to begin, most typically, with the use of memorized strings: This is naturalistic second-language acquisition by children.[4] The first study to remark on this was no doubt the Kenyeres' diary account of their six-year-old Hungarian-speaking daughter's acquisition of French (1938). In the first month in Geneva Eva asked her parents the meaning of tout le monde à sa place 'everyone to his own seat', qui c'est qui joue à l'école? 'who plays at school?', and feuille d'où viens-tu? 'leaf, where do you come from?' (the title of a song). In the next month she attempted to make up with her mother after a quarrel, using strikingly formulaic French: Maman, s'il vous plait, qu'est-ce que c'est, voulez-vous? 'Mother, please, what is it, would you like?' In another early attempt at constructing a sentence she modified one element in a memorized string, asking Où sont les mamans? 'where are the mothers', pro 'mother', based on a sentence learned at school, où sont les ciseaux? 'where are the scissors?'.

In a 1970 UCLA masters thesis Huang found that his five-year-old Chinese subject "was capable of imitating amazingly complex sentences almost from the start and to attach a global meaning to them" (Huang and Hatch 1978: 131). In the first month of exposure to English Huang's subject used the following imitated strings ("rule-formed utterances" began to occur only in the sixth week): Get out of here!, It's time to eat and drink, Let's go!, Don't do that!, Don't touch! Kenji Hakuta has also presented data to demonstrate the use of "pre-fabricated patterns" by a five-year-old Japanese girl learning English (1974). Hakuta analyzes three such patterns, those using the copula,

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[4] Observational data on naturalistic second language acquisition by adults are practically non-existent, though one study of a 19-year-old Arabic speaker learning English does report heavy dependence on formulaic speech at the outset (Hanania and Gradman 1977). Scarcella (1979) used some simple drawings to test 60 adult learners of English on their knowledge of such formulas as Watch out!, Fill 'er up, Keep the change, I'm sorry I'm late. She found that her subjects made full, accurate use of the formulas only about 34% of the time. For the remainder, the adults avoided the expected routine by resorting to paraphrase (44% of the errors), or aimed at but just missed the expected wording of the formula (25%), or used the wrong formula (10%), or translated word-for-word from a corresponding formula in their first language (9%). Scarcella concludes that "many adult second language acquirers have difficulty acquiring very common routines" (84).

the string do you in questions, and the string how to in embedded how-questions, showing that, though well-formed on the surface, each of these was in fact memorized without internal analysis, so that do you, for example, functioned as a question marker, turning up as an error only in the few cases where the child attempted a question with a third person subject, such as What do you do it, this, froggie?, What do you doing, this boy?

Lily Wong Fillmore's 1976 Stanford thesis provides the most extensive documentation of the use of formulas by children learning a second language. Presenting data from five Mexican children, each recorded while interacting with the observer and an English-speaking friend, Fillmore emphasizes the vital function formulas serve in opening communication channels with speakers of the second language, and thus in securing access to second language input.[5] Like Bolinger and Clark, she sees formulas as an entry to grammar, a data-bank to be used for later analysis and reorganization. As an example of the uninhibited use of a formulaic frame with minimal knowledge of English structure we can cite her subject Alej: Is a coffee me? (holding out a cup, pretending to ask for coffee) and Is a playground me. (speaking to Fillmore on return from a playground melee). Fillmore comments, regarding the most effective language learner, Nora, who had the greatest number of formulas, "It seems that having a few formulaic expressions which could be used facilitated the acquisition of a variety of similar forms. The evidence of this can be seen in a rather consistent pattern [in which Nora would] acquire and overuse a few formulaic expressions of a new structural type during one period, and amass a variety of similar forms during the next. Perhaps having a few formulaic expressions of a particular type permitted her to notice, interpret, and pick up like expressions" (508). Fillmore maintains that "the strategy of acquiring formulaic speech is central to the learning of language ...it is this step that puts the learner in a position to perform the analysis which is prerequisite to acquisition" (640). She indicates that in the first two of the eight months of observation the children's utterances ranged (across the children) from 53% to 100% formulaic; in the last two months the range was from 37% to 81%.

In Hatch's recent anthology of second-language acquisition studies we find the use of formulas further documented for several children, including two Japanese boys learning English, one a 3 1/2-year-old, the other 2 1/2 (cf. Yoshida 1968 and Itoh and Hatch 1968). The study of the latter is grouped by Hatch under instances of "simultaneous acquisition of two languages", presumably in accordance with the principle of drawing an arbitrary line at age three for sequential acquisition of a second language (cf. McLaughlin 1978). Yet that two-year-old subject made ample use of formulaic patterns, like other second language learners, whereas the accounts of children exposed to two languages from the start -- that is, children acquiring "bilingualism as a first language", to use Swain's expression (1972) -- have not generally noted any extensive use of unit-phrases (cf. Ronjat 1913, Pavlovitch 1920,

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[5] A French engineer visiting Stanford for the year with his family reports that his son, aged 5;9, learned as his first English expression, upon starting first grade about two months after arrival in the United States, What's your name?, which the father heard him make use of as he wrestled another child to the ground. The younger son, aged 3, attends a day care center, where he has become convinced that It's clean-up time! is an English expression signalling the advent of lunch.

Leopold 1939-49, Imedadze 1960, Tabouret-Keller 1963, Murrell 1966, Swain 1972, Celce-Murcia 1975, Padilla and Liebman 1975, Volterra and Taeschner 1978). Burling (1959) constitutes an exception of sorts: With regards to Garo, his son's dominant language during the period in question, Burling comments that the child, between age 1;11 and 2;3, "apparently always used the [syntactic] construction first in certain specific examples which he learned as a whole and by rote. After using several of these for a while, he would learn to generalize on the construction, and to substitute different morphemes or words in the same construction" (67). At the same time, he made productive use of only one English construction (more + N): "The few other English phrases which he used, including even such complex ones as 'What are you doing', had been memorized as units and the parts were not separable" (id.). In other words, Burling's son is following the route Cazden outlines for the acquisition of English inflectional morphology in his acquisition of Garo morphology and syntax, while in his weaker language, English, he behaves much like other children learning a second language, who seem universally to make use of a formula strategy for a while. Thus, to add to the cases already cited, we can mention Oksaar's son, who first learned to speak Estonian and Swedish at the same time and who then was exposed to his third language, German, at 3;11. "The first striking difference [between his simultaneous acquisition of the first two languages and his subsequent acquisition of German] is that instead of single items blocks of utterances were produced after just two or three weeks in Hamburg. Only 30 percent were two-word sequences of the type grosse Treppe; nicht treten; guck mal; 70 percent were three-word sequences of the type: was ist das?; ich komm runter" (1977: 301).

The study of a child learning a second language before age two would be of particular interest in view of the memory span issue: Such a child must be still well within the period of intensive first language acquisition, if indeed he has already acquired a sizeable first-language lexicon and has begun combining words into sentences. In fact, as we shall see, at least one such child did use acquisition strategies in regard to the second language which resemble those of older children more than they do her own first language strategies.

The child in question is my daughter Virve, who had a recorded vocabulary of about 260 words in her first language, Estonian, and a mean length of utterance of 2.05 when she began spending four hours daily at a day care center where only English is spoken, at 21 months. Virve (hereafter V.) had learned about 17 English words by the time she entered the center, but she made regular use of only four or five -- no, hi, bye, mine, come -- and her comprehension of English was minimal.[6]

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[6]Virve's acquisition of English is described in greater detail in Vihman (in preparation), where the circumstances of data collection are set forth as follows: "The methodology of this study was dictated by the circumstances. First, since my husband and I had established a policy of speaking only Estonian with V. from the time of her birth, unless monolingual English-speakers were present, I was loath to 'elicit' any English from her myself. Second, because V. was so shy of strangers, it was unlikely an unknown English-speaking adult would have much luck eliciting speech, unless that person were to do so regularly over an extended period -- and then the elicitation sessions would likely take on the nature of language lessons... But I was interested in following V.'s progress in English in a completely natural setting, loti-

In the first month V. made use of 7 new English lexical units, every one of them morphologically complex words or even multi-word strings, though they seemed clearly to be single, unanalyzed units for V.: happy birthday to you, Jingle Bells, pattycake, thank you, what's that, six-nine (referring to numbers on a calculator), Mickey Mouse. In the second month the "lexical opacity index", as we might call it, was lower: Of 15 new items, 8 were actually phrases, namely, come on, stop it, that's mine, jump down, Happy New Year, my goodness, apple juice, lunch time. The fact that the first influx of new vocabulary consisted exclusively of complex words or phrases is suggestive: We might suppose that the lack of analysis was related to V.'s lack of significant previous exposure to English, as compared with the first language learner, who generally has a several month lead in comprehension by the time he begins to produce adult-based words in quantity. The drop in number of morphemes per unit could indicate a growing ability to separate out the parts of lexical items of interest -- though the fact that all but two of the items used in the first month were proper names or routine formulas in the adult language rather weakens this argument in the present instance.

In any case we can note that V. made no use of phrases in her early first-language lexicon, though her choice of words qualified her as "expressive", like those of Nelson's children who did use phrases.[7] How, then, shall we explain this shift in strategy over the mere seven or eight months that separate the initial stages of first and second language acquisition in V.'s case? The structure of English as opposed to Estonian may be relevant: MacWhinney has claimed that "if a language uses relatively unambiguous intonational cues to mark words as basic units, the intonational units acquired by children will be words" (1978: 10). Estonian would be such a language, since its core vocabulary is characterized by strong demarcative (first syllable) stress on content words. Of three Estonian-speaking children I have observed (see Vihman 1971, 1976, 1979), none appeared to learn whole unit-phrases at the

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vated by V.'s communicative needs rather than by my own need for quantifiable data. As a result, the information I have is fragmentary... Nevertheless, because V. felt quite unconstrained about practicing her English at home (where she received no encouragement to do so; quite the reverse), and because she proved an adept learner with a high degree of interest in language, the data are plentiful, though not, on the whole, quantifiable" (3). In addition to recording whatever English V. used at home, in the car, or on visits, whether she was speaking to her parents, to herself, or to others, I worked at V.'s cooperative daycare center for a few hours each week and had no difficulty noting down the little English she used in that context.

[7] V. proved far more clearly "expressive" in her second-language lexical choices, inasmuch as only 28% of the first 50 English words she produced after 1;9 were general nominals, while 36% fell in the personal-social category (the figures for the first fifty words she produced when she began speaking -- including five English words -- are 48% general nominal and 22% personal-social). Contrast Yoshida 1978, whose 3 1/2-year-old male subject had 60% general nominals in his second language (English), and was thus clearly "referential". The number of personal-social expressions, which is not reported, was presumably insignificant; we have no information on the make-up of his first language lexicon. But this Japanese-speaker, like V., exhibited the learning of unit phrases, which appears to be highly characteristic of second-language learners regardless of differences in cognitive and linguistic style or strategies.

start. In fact, at least one, Linda V., was misled by the absence of stress on the negative particle: pro ei taha '(I) don't want', lit. 'no want', she produced taha, with strong stress and an emphatic shaking of the head to make the negative meaning clear. My own second child, Raivo, who was exposed to at least four hours of English a day from the age of six months on, through baby-sitters and other children, and who had an average of 24% English words in his lexicon over the first 10 months of language use (with 26% active English words at 2;0, out of a recorded vocabulary of 489 words), used only one unit-phrase in his first fifty words: what's this? By 2;0 he had used 24 such expressions, all English, the longest being Billy goat, Nanny goat, from a nursery school chant of his older sister's. There were virtually no prefabricated phrases apparent in his Estonian lexicon. Similarly, in the published vocabulary of a two-year-old Romanian- and English-speaking child (Vogel 1975) we find just two multi-word units cited for Romanian (out of 85 words), though there are multimorphemic units, such as noun + article suffix; out of the 70 English words listed, nine are clearly multiword units (bad boy, I got it, I had it, look at, right here, sit down, up here, and yes-or-no), while an additional three verbs optionally include the pronoun I. Disregarding the latter, the English vocabulary consists of 13% unit-phrases. Finally, in the small English vocabulary V. acquired before entering day-care at 1;9 she had four unit-phrases -- peek-a-boo, all done, more juice, and all fall down; this amounts to 24% of her English lexicon. These figures do seem to implicate the structure of English as a factor in V.'s use of formulas in her second-language acquisition, but the fact that the same strategy is reported for the acquisition of French (Valette 1964, Ervin-Tripp 1974), German (Oksaar 1977), and Hebrew (Berman 1979) seems to tip the balance in favor of a universal strategy for successive acquisition of a second language by children. Certainly a broader sampling of children learning languages of various structural types will be needed to fairly evaluate this factor.

A simple increase in articulatory control could also be involved here, enabling V. to "get her mouth around" longer strings, so to speak. But clarity of enunciation was an outstanding property of V.'s earliest speech; I encountered nothing remotely resembling the "mush-mouth" problem Peters faced with Minh.

It could also be argued that input was the significant variable: L. Fillmore, for example, maintains that the formulaic speech of child second-language learners derives from the more complex language addressed to them, as compared with that directed at a one-year-old acquiring his first language (personal communication). Yet in V.'s case, again, the time interval between first and second language acquisition was only a few months. Is it likely that a 21-month-old who understands very little English would be addressed, by adult caretakers, very differently from any other infant just learning his first language? On the other hand, the amount of one-to-one adult-child speech at a day care center is significantly lower than the amount an only child receives from a parent-caretaker at home, and in fact many of V.'s unit-phrases clearly derive from the speech of the other children (e.g., that's mine, stop it) as well as from routines addressed to the group of 9-month to 3-year-olds indiscriminately: e.g., lunch time!

Could it be that sheer short-term memory span had increased? Or is it more likely that V.'s experience in combining words in her first language led her to look for longer chunks with which to express herself in English? This latter explanation seems closest to Olson's hypothesis that "limits on information processing are ontogenetically invariant,... nominal quantitative

changes in the amount of externally defined information that can be handled have to do with the nature of the child's internal representations" (1973: 150). That is, rather than credit simple memory for digits, as in Brown's work cited earlier (cf. also Hakuta's reference to "a developed processing span [which] enables memorization of longer speech segments... Segments... like this would be not too different from individual lexical items" (1975: 22)), it may be that we should look specifically to an expanded memory-for-language, based on experience with form-meaning (or form-situation) pairings in the first language. For children learning a second language generally we can appreciate the increased ease experienced in pairing a situation-based meaning with the several-syllables-long string which expresses it as compared with the first language learner, for whom linguistic difficulties are initially present at both the phonetic and the semantic levels (assuming, with Bruner 1975, Bates 1976, Snow 1977, and many others, that certain basic pragmatic aspects of language -- such as the nature of communication, the structuring of dialogue or conversation, etc. -- are the earliest aspects of language to be understood by the child, somewhat before the onset of productive speech-with-adult-models). In this framework V. clearly is more like the older second-language learner: Despite her age, she could produce strings of up to five or six morphemes in her first language, and thus had to have a fairly well-developed capacity for internally representing (her first) language by the time she began seriously grappling with her second language.

In contrast, Fantini 1974 reports on the progress of his son, Mario, who learned Spanish (as well as a little Italian) at home and English in the community. Though, like V., he had contact with English-speaking relatives and other visitors from the start, Mario, also like V., began to make regular use of English only when he entered a nursery school, at 2;6. Unlike V., however, he was still at an early stage of first language acquisition at that point. Fantini does not directly report on the size of the child's lexical store or his MLU at 2;6, but he notes a total of about 50 recorded words (including five unit-phrases, one the English <u>don't touch</u>) as of 2;3; and he comments that "by 2;7 four-word utterances were common, marking the upper limits of sentences produced during his first three years" (190f.). Fantini remarks on the early unit-phrases, or "imitative expressions, requiring no knowledge of underlying syntactic rules", in Spanish (89), but reports no such strategy in Mario's acquisition of English from 2;6 on. These data, alongside my own observations of V.'s second-language learning, seem to suggest that chronological age is less important than stage of linguistic development in determining whether or not a child will use a formula strategy in acquiring productive use of a second language.

Though V.'s second-language learning seems in some ways in the nature of a test case of Olson's position, the "natural experiment" is, as usual, too ill-defined, too compounded with external factors (such as the phonological and morphological make-up of the two languages in question and the relative complexity of the input she received) to afford a satisfyingly clear or conclusive answer to the question of growth in memory capacity in the one-to-two-year old.

In the third month V. began to construct simple English sentences: On hearing 'everybody out' (of the car), she said, <u>Linda out</u> (V.'s age was 2;0.4 at this point); in response to another child who said 'That's not my lunch', <u>no, mine lunch</u> (2;0.6); and initiating with her mother the naming game her

English-speaking relatives often played with her, what's that -- shirt? (lifting the hem of her shirt: 2;0.27). The following month her constructed sentences had already become more complex as well as more numerous: Raising a warning finger to her cousin Jeff, Jeff, no nose 'don't touch my nose' (2;1.0); Anjalee, it's yours baby (returning a doll to a friend: 2;1.3), no hold Virve (wrestling with her father: 2;1.5), book fell down (2;1.8), no, no, mama, no, you throw no (as her mother throws her a ball: 2;1.15). At the same time V. used 63 new items in this month, including 111 words, or 1.76 words per utterance. There was no indication that any of these complex units were fully constructed, and clear evidence that some were memorized, such as roll it, roll it, and mark it V (from Patty-cake: 2;1.1), or partly memorized, partly constructed: Stepping on her mother's foot, V. said, put-your [puč∧] Virve's foot (from the song Hokey-Pokey: 'Put your right foot in...': 2;1.19). More conversational formulas V. used at this point included I'll get it, used several times appropriately but formally invariant; I will be back; what happened (there)?; what are doing?, which also took the form what doing? and what you doing?, suggesting some on-going effort at analysis; and what's the matter? In two cases V. glossed her phrases in Estonian: I like it she rendered as 'Virve wants' (2;1.2), run away as 'go away' (2;2.10). Thus V. seems here to be following, at 25 months, a strategy which is typical of second-language learners, including the storage and use of unanalyzed complex strings, and the assignment of roughly appropriate global or situational meanings to these strings.

In addition to making fairly rapid lexical and syntactic progress in the fourth month, V. also began to produce strings of distinctively English-sounding jargon; these seemed to arise out of a kind of obsession with the new language, which intruded more and more frequently at this time into the otherwise monolingual Estonian home environment.[8] The earliest instance occurred at 2;1.2: With a devilish air, early one morning, she reached for a journal on her mother's bed, saying [a: gadit hə̃n pë:k] 'I've got it (one?) book'. Repeating this two or three times, she proceeded to turn pages and "read" aloud in English-sounding gibberish, making heavy use of the sequence [hə̃n]. One could sometimes detect, embedded in such jargon sequences, recognizable strings of English, quite out of context. For example, at dinner at 2;1.7 she played with her fork and spoon, chattering and saying at one point, do it again, Jennifer. At lunch at home three days later she said distinctly, Let's go, lunch time, bodybody, lunch time, yes, quite obviously rehearsing phrases often used at school. At 2;1.22 she spoke some garbled-sounding English to her father, ending with my house. To his question, in Estonian, as to what this meant, V. replied, 'You mustn't come into my house take away. The one that's in my room.' At lunch the same day she uttered some strings of jargon, ending with I want to get down, please [ayɯ wan∧ gEɯ dawn, piys], with spread of a gratuitous r-glide across the string. A month later V. was no longer producing jargon, though she still used longer strings in talking aloud while playing alone than when actually communicating with English-speakers, who were necessarily outside her immediate family. For example, playing outdoors while her parents were present but otherwise

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[8] Compare Kenyeres, who writes, "De ce chaos surgissent...les éléments entendus le plus souvent. Ceux-ci se fixent quelquefois dans sa mémoire avant qu'elle en comprenne le sens. Ils résonnent plus tard à ses oreilles. Quelquefois ce sont des phrases entières... C'est un grouillement dans son cerveau" (1938: 328).

occupied, V. said I'm [g]onna come back to see you ([àymn̩ʌkʌmbæktʌsíyyuw]) as she went down some steps to get on her tricycle. She then added, I'm [g]onna bike ([àymn̩ʌbáyk]) (2;2.3). The first string seems likely to have been fully drawn from memory, the second a two-part construction, I'm gonna + bike.[9]

Two qualities differentiate the jargon strings from the English sentences V. built from scratch: Not only were they longer (as compared to her two or three word constructed utterances), but they seemed not to be filtered through her first language phonology: They quite successfully rendered the superficial acoustic impression of English, even if individual segments might be misplaced or mispronounced. The strings can be fairly characterized as simple mimicry, or parroting, though they were not prompted by a direct model but were recalled from memory after a delay of unknown length. They differ from the unanalyzed phrases or formulas in that no situational meaning appeared to be attached to them. Since V.'s growing repertoire of individual lexical items were pronounced like Estonian words at first, with gradual substitution of English segments as V. mastered the new phonology, the simultaneous occurrence of these phonetically accurate strings suggests the existence of multiple lexical stores, each with its associated phonetic or phonological processors, much as Moskowitz has postulated for child language (1977). In adult language, dysfluencies in "propositional" speech as opposed to the fluent production of formulaic or "automatic" speech may point to a similar dichotomy (Goldman-Eisler 1968, Van Lancker 1975; cf. also L. Fillmore 1976: 427f.).

To consider briefly the operation of a formula strategy, on the one hand, and the co-existence of competing phonological processors, on the other, we can review the development of a particularly high-frequency construction type, that of I want + noun and verb complements, over an eight-month period.[10] Within the fourth month two distinct forms of the verb want were used: I wannu, used at school in response to the question, "Do you want to look at the hamster?", and I want more [ay vant mɔɹ], said to her mother at dinner. For two months thereafter V. used the form wanna (or wannu) exclusively, whether it was followed by an adverb, a verb, or a noun.

2;1.28 I wanna down.
2;2.2 I wanna here.

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[9]Berman (1979) also reports the use of jargon by her daughter, Shelli, who re-acquired Hebrew after a year of speaking only English. Unlike V., Shelli had made extensive use of jargon earlier, throughout her first year of language use; on return to Israel, at 4;6, Shelli "would sing in a kind of gibberish in which were interspersed several words and formulas from Hebrew, seemingly at random; and she would indulge in this kind of chanting-talk when "reading" a book, "talking" on the telephone, or watching a Hebrew show on television. Just as in her original jargon, these vocalizations, too, contained many Hebrew-like sounds such as a low /a/ and velar /x/, and they became increasingly interspersed with Hebrew words.... By her second month back in Israel, Shelli no longer jargonized." (164)

[10]These were the most common verb constructions for Itoh's subject as well; his use of I wanna as a formulaic sentence-opener is very similar to V.'s (see Itoh and Hatch 1978: 86).

2;2.22 I wanna home.

2;2.3 I wanna go back.
2;2.14 I wanna eat-it yoghurt.
2;2.22 You wanna see three-jump? (poising a toy bear on the edge of a couch)
2;4.16 I wanna this do. (This word order, which persisted throughout the period covered here, reflects a common Estonian syntactic choice.)

2;2.4 I wannu elutoas book. (elutoas 'in the living room')
2;2.14 I wanna sandals on.
2;2.14 I wanna clothes on. (on hearing "Virve will have to put her clothes on")
2;2.22 I don't wannu potty.
2;4.6 I wanna my lap, mama. (asking for a picnic lunch, to eat on her lap)
2;4.6 I wanna candy.
2;4.16 You wanna your lunch?
2;4.16 I wanna crayon.

She then again began to use want, now pronounced [uant], but correctly followed by a noun or pronoun complement.

2;4.18 You want your mama?
2;4.20 You want another puzzle?
2;4.20 This puzzle you want?
2;4.25 I don't want it.

The following month she overgeneralized her new construction: You want come my house? (2;5.0). The remaining recorded instances show wanna followed by a verb, with one exception: As her teacher traced the outlines of another child's foot, V. said I wanna my foot too (2;7.24), apparently regressing in the face of a more complex construction than she had attempted before, where the subject of the second clause differs from that of the first. Compare the remaining instances:

2;7.11 I wanna do puzzle.
2;7.11 I wanna go.
2;7.11 I wanna read a book.
2;7.13 I wanna come inside. (responding to "No one can come inside.")
2;7.20 I wanna go back.
2;7.29 I wanna play with Linda.
2;8.15 I wanna play my room.
2;8.22 I wanna this do, you, Jeff. 'I want to do this with you, Jeff.'

What these data suggest is a dynamic interplay between grammar and lexicon, in which the child alternates between the choice of a ready-made formula, I wanna, delivered with a fluent approximation to English fast-speech style, and the competing lexical item, want, filtered through her existing Estonian-based phonological system (which lacks /w/, but includes both /v/ and /ua/ sequences). Both forms are subject to V.'s emergent syntactic rules or overgeneralizations, with a gradual reorganization in the direction of conventional English grammar. Such an interplay between formulaic or automatic phrasal units and strings constructed out of single lexical items has been detected in adult language as well: "In the flow of normal speech voluntary and automatic activities are closely interlaced, symbolic behaviour alternates with habitual verbalization, the construction of propositions with emotional

expression and with the use of ready-made phrases, choice in fitting words to meaning takes turns with submission to the routine course and to the constraints of learned sequences... Normal spontaneous speech might be viewed as a highly integrated blend of processes at both levels where results of practice alternate with spontaneous creation" (Goldman-Eisler 1968: 9f; cf. also Bateson 1975: 61).[11]

Though idioms, or bound expressions, received some attention within the transformational framework in the last decade as potential obstructions to the smooth working of a set of generative rules (cf. Katz and Postal 1963, Weinreich 1969, Fraser 1970), it is only in the last decade that simple collocations, including situational or routine formulas, have been cited as a kind of counter-evidence to the creativity and productivity generally claimed for language. For example, Becker, in "The Phrasal Lexicon" (1975), sees the use of language as "based at least as much on memorization as on any impromptu problem-solving" (27); in his view, "productive processes [or generative rules] have the secondary role of adapting the old phrases [or formulas] to the new situation" (1). Bolinger's suggestion, quoted earlier, that "learning goes on constantly...in segments of collocation size" which yield only gradually to analysis closely resembles Ferguson's position regarding phonology: "At the basis of an individual adult's phonology is really something like the phonologically unanalyzed phonetic shapes of whole words, no matter how much phonological order the individual may put into it. All of us make some use of phonetic shapes of whole words unphonologized" (1977: 287; cf. also Ferguson and Farwell 1975).

In explaining the results of some psycholinguistic tests on the productivity of English derivational morphophonemics John Ohala (1974) suggested that there must in some cases be alternate phonological representations of a single word for a single speaker. He represented in flow-chart form a "hypothetical algorithm for analogical derivation", in which the speaker has the option of avoiding the complex analogical (phonological rule) route in favor of a simple addition of affix to stem with no phonetic (or morphophonemic) change (373). If Goldman-Eisler and the other writers I have cited are right in suggesting that normal spontaneous adult speech typically alternates between creative construction and the use of ready-made formulas, then a model much like that underlying Ohala's flow-chart representation may be needed to express the relation between multiple lexical possibilities, some consisting of collocations and other phrase-length units, and the workings of grammar or syntax.

In short, the use of formulas by children learning a second language is not so remote from ordinary adult language use. A great deal of further

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[11] Wagner-Gough (1975) presents data from a Persian- and Assyrian-speaking child, Homer, who began to learn English at 5;11. Wagner-Gough shows that Homer, who tended to make heavy use of imitation, often incorporated portions of the previous speaker's utterance in his own speech (like Adam Clark, quoted earlier). She further demonstrates the evolution of wh-question formation rules in Homer's speech, based on the incorporated patterns. Though Wagner-Gough contrasts her analysis with that of Klima and Bellugi (1966), who derive children's wh-questions via transformations from a deep-structure string, it is likely that both juxtaposition of unanalyzed units and creative construction play a role in sentence formation at all ages.

work, and some rather clever methodology, will be needed to ascertain the relationship between memory and analysis; the assembling of "formulas, cliches, idioms, allusions, slogans, and so forth" (Becker 1975: 1) which goes into producing the novel but often familiar-sounding utterances of the practiced speaker is not easily detected, since the process has become deceptively fluent or automatic. Whereas in early first language learning memory strategies are inadequate, on the whole, to the task of storing large chunks of unanalyzed material, the child second-language learner comes already prepared with a language-wise memory, a developing need for social intercourse, and an enviable willingness to venture into unexplored territory. These seem to be the right ingredients to afford us a window on the dynamics of memory and generative rule as they interact to create an air of competent performance.

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